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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/523,528 | 02/04/2005 | Tej Paul Kaushal | 124-1103 | 1459 |
| 23117 7590 03/15/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203 | | | EXAMINER THAI, LUAN C | |
| | | | ART UNIT | PAPER NUMBER |
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| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/523,528

Applicant(s)

KAUSHAL ET AL.

Examiner

Luan Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19,21-40 and 56 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19,21-40 and 56 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>4/26/05</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The Information disclosure Statement filed on 4/26/05 has been considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 8, 11, 14, 16-18, 21-27, 32, 38, 40 and 56, are rejected under 35 U.S.C. 102(b) as being anticipated by Althaus et al. (6,092,935).

Regarding claims 1-5, 8, 11, 14, 16-18, 21-27, 32, 38, 40 and 56, Althaus et al. (see specifically figure 3) disclose a method of hermetically packaging an electronic device (e.g., an optoelectronic transmitting and/or receiving unit 5, which is considered as a thermal detector), in an enclosure comprising mutually inter-engageable first and second housing members (12/14-15/9), comprising the steps of (i) securing the electronic device (30) to a base portion (12) of the first housing member (12/14), (ii) engaging the first and second housing members, such that an

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hermetic seal is provided there between (Col. 7, lines 9+), wherein the engagement step is performed in a controlled atmosphere (Col. 1, lines 44+), and an engagement portion adapted to engage with the second housing member (See Fig. 3), and wherein the method further comprises the step of attaching the base portion (12) to the engagement portion prior to engaging the first and second housing members, wherein the first and second housing members, are adapted to inter-engage to form an interference fit there between, the interference fit providing a hermetic seal (28) interposed between the first housing member (14) and the second housing member (15/9), wherein the seal comprises at least one of resistance welding, laser welding, a conventional weld seam, soldered or adhesively bonded (Col. 5, lines 61+). Althaus et al. also disclose the second housing member further comprising a second substantially transmissive optical element (1) and an engagement portion (15) adapted to engage with the first housing member (14).

5. Claims 1, 3-5, 8, 11-13, 21-23, 25-27, 32-33, 35-36, and 56, are rejected under 35 U.S.C. 102(b) as being anticipated by Webster et al. (6,686,588).

Regarding claims 1, 3-5, 8, 11-13, 21-23, 25-27, 32-33, 35-36 and 56, Webster et al. (see specifically figure 2, Col. 1, lines 50+ and Col. 7, lines 55+) disclose a method of hermetically packaging an electronic device (e.g., an the image sensor 108 is considered as a thermal detector), in an enclosure comprising mutually inter-engageable a first housing member (102) and a second housing member (130), comprising the steps of (i) securing the electronic device (108) to a base portion (104) of the first housing member, (ii) engaging the first and second housing members, such that an hermetic seal (302A/302B) is provided there between, wherein the engagement step is performed in a controlled atmosphere, and an engagement portion (106J1,

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See Fig. 3C, Col. 8, lines 39+) adapted to engage with the second housing member (130), and wherein the first and second housing members are adapted to inter-engage to form an interference fit there between, the interference fit providing a hermetic seal (e.g., adhesive 302B) interposed between the first housing member and the second housing member (See Fig. 2 and 3C). Webster et al. also disclose the second housing member further comprising a first substantially transmissive optical element (e.g., lens 150), a second substantially transmissive optical element (136), and an engagement portion (156A, See Fig. 2) adapted to engage with the first housing member (102) and the seal (302A/302B) provided between the first housing member (102) and the first optical element (150).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6, 15, 28 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al. (6,092,935) in view of De Poorter (5,578,863).

Regarding claims 6 and 28, Althaus et al. discloses the claimed invention as detailed above except for specifying the seal comprising an indium seal.

Indium seal, however, is commonly applied in the art, specifically in the optical art, for sealing or bonding two objects, as disclosed by De Poorter (Col. 4, lines 45+). It would have been obvious to one of ordinary skill in the art at the time the invention was made applied an

indium seal for sealing the first and second housing members in Althaus et al.'s optoelectronic device, since such sealing is commonly used in the art, as disclosed by De Poorter al.

Regarding claims 15 and 39, Althaus et al. discloses the claimed invention as detailed above except for specifying the inert gas comprising one of nitrogen and argon.

Nitrogen, however, is a known inert gas and commonly applied in optical art, in order to prevent the optical device from being degraded by water vapor or other (possibly aggressive) gaseous impurities present in the housing, as disclosed by De Poorter (Col. 4, lines 28+). It would have been obvious to one of ordinary skill in the art at the time the invention was made modify Althaus et al. accordingly in order to prevent the optical device from being degraded by water vapor or other (possibly aggressive) gaseous impurities present in the housing.

8. Claims 7 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al. (6,092,935) in view of Fayfield (5,198,664).

Regarding claims 7 and 29, Althaus et al. discloses the claimed invention as detailed above except for specifying the seal comprising a compressible elastomeric ring.

Fayfield while related to a similar method of packaging an optical device teaches (see specifically figure 3) of using a compressible elastomeric ring (56) to provide a reliable moisture seal and to avoid the gaps or openings formed due to shock, strain or thermal cycling (Col. 5, lines 9+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize that combining Fayfield's teachings with Althaus et al.'s invention would have been beneficial because it helps to provide a reliable moisture seal and to avoid the gaps or openings formed due to shock, strain or thermal cycling.

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9. Claims 9-10, 19, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al. (6,092,935) in view of Palmer (4,307,934).

Regarding claims 9-10 and 30-31, Althaus et al. discloses the claimed invention as detailed above except for a spacer or a retainer disposed adjacent the sealing so as to retain the seal.

Palmer while related to a similar method of packaging an optical device teaches (see specifically figure 2) a retainer ring (60) (Col. 4, lines 3+) is disposed adjacent the hermetical seal (Col. 5, lines 1+) so that the optical assembly (25) may be held within the housing (54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Althaus et al.'s structure to include a retainer ring disposed adjacent the hermetical seal in order to have a defined space as hermetically sealing the window can (32) and the header (28), as taught by Palmer (Col. 5, lines 1+), and such modification is held to be within the ordinary designing ability expected of a person skilled in the art.

Regarding claim 19, Althaus et al. discloses the claimed invention as detailed above except for specifying the shape (e.g., *metal cylinder having a substantially circular cross section*) of the first and second housing members.

However, forming a first and a second housing member, which comprise metal cylinder having substantially circular cross section, is commonly applied in the art, specifically in semiconductor optical art, as disclosed by Palmer. Palmer teaches first and second housing members (33/54) comprising metal cylinders having a substantially circular cross section (Col. 3, lines 7+ and 59+), being engaged with a hermetic seal provided there between (Col. 3, lines 13+, and Col. 5, lines 1+). It would have been obvious to a person of ordinary skill in the art at the

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time the invention was made modify Althaus et al.'s first and second housing members in structure to have the shape as applicant claimed (e.g., *metal cylinder having a substantially circular cross section*) since such claimed shape is commonly applied in the art, as taught by Palmer, and such modification is held to be within the ordinary designing ability expected of a person skilled in the art.

10. Claims 34 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al. (6,092,935) in view of Akagawa et al. (5,804,827).

Regarding claims 34 and 37, Althaus et al. discloses the claimed invention as detailed above except for specifying optical element comprising chalcogenide glass.

Chalcogenide glass, however, is a known material in the optical art for making a transparent window or lens, as disclosed by Akagawa et al. (Col. 11, lines 6+ and lines 29+). It would have been obvious to one of ordinary skill in the art at the time the invention was made modify Althaus et al. by using chalcogenide glass in forming the first optical element, since selecting a specific type of known available material, in an optical system, for providing a desired light would have been obvious to one ordinary skill in the art.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 8:00 AM - 4:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Luan Thai', with a long, sweeping horizontal line extending to the right.

Luan Thai

Primary Examiner

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March 7, 2007